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EXAMINER	
LI, SHI K	

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/626,363	HOANG ET AL.	
	Examiner	Art Unit	
	Shi K. Li	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 recites the limitation "where network topology is the paths and wavelengths of all possible communication paths from that access node to other nodes" in lines 6-8 of the claim. The specification as originally filed does not teach such limitation. Therefore, it is considered as new matter.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-3, 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Golmie et al. (N. Golmie et al., "A Differentiated Optical Services Model for WDM Networks", IEEE Communications Magazine, February 2000) in view of Sengupta et al. (S. Sengupta et al., "Analysis of Enhanced OSPF for Routing Lights in Optical Mesh Networks", ICC 2002, 28

April-2 May 2002) and Tisue (http://tisue.netw/cs311/fall-00/noes/graphs.html, notes for CS-311, *Data Structures*, Fall 2000).

Regarding claims 1-3, Golmie et al. teaches in FIG. 3 and Table 1 to divide a WDM network into separate service levels according to QoS criteria. Golmie et al. lists in Table 1 service level parameters and in FIG. 3 the wavelengths corresponding to a service level. The difference between Golmie et al. and the claimed invention is that Golmie et al. does not teach to form service level topology structure. Sengupta et al. teaches in p. 2865, right col., last paragraph concept of optical line group and suggests to use opaque LSA to propagate optical LSA for supporting OSPF. This allows each access node to construct service level topology. One of ordinary skill in the art would have been motivated to combine the teaching of Sengupta et al. with the WDM network of Golmie et al. because extension of OSPF using optical LSA supports real time lightpath provisioning. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use extension of OSPF to construct service level topology, as taught by Sengupta et al., in the WDM network of Golmie et al. because extension of OSPF using optical LSA supports real time lightpath provisioning.

The combination of Golmie et al. and Sengupta et al. still fails to teach storing all possible communication paths from a access node to other nodes. Tisue teaches in page 3, last paragraph a brute-force algorithm for enumerating all paths from a node to another node. One of ordinary skill in the art would have been motivated to combine the teaching of Tisue with the modified WDM network of Golmie et al. and Sengupta et al. because Tisue gives a simple method for enumerating all paths so that an appropriate path can be picked based on various conditions. Thus it would have been obvious to one of ordinary skill in the art at the time the

invention was made to store all paths enumerated by the algorithm taught by Tisue in the modified WDM network of Golmie et al. and Sengupta et al. because by enumerating all paths, an appropriate path can be picked based on various conditions.

Regarding claim 5, Sengupta et al. teaches in p. 2865, left col. to use OSPF extension for dynamic provisioning (i.e., real time establishment) of optical layer connections.

Regarding claim 8, Sengupta et al. teaches to use OSPF to construct and maintain network topology databases in each access node.

5. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Golmie et al., Sengupta et al. and Tisue as applied to claims 1-3, 5 and 8 above, and further in view of Kodialam et al. (U.S. Patent Application Pub. 2002/0018264 A1).

Golmie et al., Sengupta et al. and Tisue have been discussed above in regard to claims 1-3, 5 and 8. The difference between Golmie et al., Sengupta et al. and Tisue and the claimed invention is that Golmie et al., Sengupta et al. and Tisue do not teach conversion free connectivity constraint. Kodialam et al. teaches in paragraphs [0045] and [0046] that there are OXC with wavelength conversion capability and there are OXC without wavelength conversion capability. In network consisting of OXC without wavelength conversion, the conversion free constraint must be met. One of ordinary skill in the art would have been motivated to combine the teaching of Kodialam et al. with the modified WDM network of Golmie et al., Sengupta et al. and Tisue because some OXC do not have wavelength conversion capability to keep the cost of OXC low. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to include conversion free constraint according to the capability of network

elements, as taught by Kodialam et al., in the modified WDM network of Golmie et al., Sengupta et al. and Tisue because conversion free network costs less.

Regarding claim 6, Golmie et al. teaches in Table 1 QoS parameters.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Golmie et al., Sengupta et al., Tisue and Kodialam et al. as applied to claims 4 and 6 above, and further in view of Date ("An Introduction to Database Systems" by C. Date, Addison-Wesley, 1986, pp. 29-41).

Golmie et al., Sengupta et al., Tisue and Kodialam et al. have been discussed above in regard to claims 4 and 6. The difference between Golmie et al., Sengupta et al., Tisue and Kodialam et al. and the claimed invention is that Golmie et al., Sengupta et al., Tisue and Kodialam et al. do not teach to store separate service level topology structure for each service level. Date teaches in Chapter 2 architecture of a database system. In particular, Date teaches in FIG. 2.3 separate storage structure and separate external user views. One of ordinary skill in the art would have been motivated to combine the teaching of Date with the modified WDM network of Golmie et al., Sengupta et al., Tisue and Kodialam et al. because separate database views provide network topology for each service level and allows management personnel to engineer and maintain each service level. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide separate topology databases, as taught by Date, in the modified WDM network of Golmie et al., Sengupta et al., Tisue and Kodialam et al. because separate database views provide network topology for each service level and allows management personnel to engineer and maintain each service level.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Golmie et al., Sengupta et al. and Tisue as applied to claims 1-3, 5 and 8 above, and further in view of Solheim et al. (U.S. Patent Application Pub. 2003/0016414 A1).

Golmie et al., Sengupta et al. and Tisue have been discussed above in regard to claims 1-3, 5 and 8. The difference between Golmie et al., Sengupta et al. and Tisue and the claimed invention is that Golmie et al., Sengupta et al. and Tisue do not teach a centralized network server. Solheim et al. teaches in FIG. 2A, FIG. 3 and paragraph [0072] centralized network and element management system (NEMS) and centralized database. One of ordinary skill in the art would have been motivated to combine the teaching of Solheim et al. with the modified WDM network of Golmie et al., Sengupta et al. and Tisue because a centralized database provides network management personnel a whole picture of the network and facilitates network management. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a centralized database in a centralized network management system, as taught by Solheim et al., in the modified WDM network of Golmie et al., Sengupta et al. and Tisue because a centralized database provides network management personnel a whole picture of the network and facilitates network management.

8. Claims 10-11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sengupta et al. (S. Sengupta et al., "Analysis of Enhanced OSPF for Routing Lights in Optical Mesh Networks", ICC 2002, 28 April-2 May 2002) in view of Shami et al. (A. Shami et al., "Performance Evaluation of Two GMPLS-Based Distributed Control and Management Protocols for Dynamic Lightpath Provisioning in Future IP Networks", ICC 2002, 28 April-2 May 2002).

Regarding claim 10, Sengupta et al. teaches in FIG. 1 a WDM optical network including a plurality of nodes. Sengupta et al. defines in p. 2865, right col., Section II.A and FIG. 2 optical channel and optical link. Sengupta et al. teaches to use enhanced OSPF for setting up lightpaths. The difference between Sengupta et al. and the claimed invention is that Sengupta et al. does not teach conversion free connectivity. Shami et al. explains in FIG. 1 a network model where a lightpath comprises an optical signal carried by a wavelength channel traversing a series of nodes and links. Shami et al. teaches in p. 2290, left col., third paragraph that none of the OXC has wavelength conversion because wavelength conversion is expensive. One of ordinary skill in the art would have been motivated to combine the teaching of Shami et al. with the WDM network of Sengupta et al. to use the same wavelength on all the links along the entire route from source-to-destination because wavelength conversion is expensive. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the same wavelength on all the links along the entire route from source-to-destination, as taught by Shami et al., in the WDM network of Sengupta et al. because wavelength conversion is expensive.

Regarding claim 11, Shami et al. teaches in p. 2290, last paragraph to receive connection request and allocate lightpath. This implies an allocate module for performing the function.

Regarding claim 14, Shami et al. teaches in p. 2291, left col., Section III B that each node maintains the database in a link state approach.

9. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sengupta et al. and Shami et al. as applied to claims 10-11 and 14 above, and further in view of Golmie et al. (N. Golmie et al., "A Differentiated Optical Services Model for WDM Networks", IEEE Communications Magazine, February 2000).

Sengupta et al. and Shami et al. have been discussed above in regard to claims 10-11 and 14. The difference between Sengupta et al. and Shami et al. and the claimed invention is that Sengupta et al. and Shami et al. do not teach a plurality of service levels. Golmie et al. teaches in FIG. 3 and Table 1 to divide optical links into channels according to a plurality of service levels. One of ordinary skill in the art would have been motivated to combine the teaching of Golmie et al. with the modified WDM network of Sengupta et al. and Shami et al. because different service levels fulfill different customer needs. For example, certain customers are willing to pay premier charge for high quality service. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to divide the network into a plurality of service levels, as taught by Golmie et al., in the modified WDM network of Sengupta et al. and Shami et al. because different service levels fulfill different customer needs.

10. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sengupta et al. and Shami et al. as applied to claims 10-11 and 14 above, and further in view of Solheim et al. (U.S. Patent Application Pub. 2003/0016414 A1).

Sengupta et al. and Shami et al. have been discussed above in regard to claims 10-11 and 14. The difference between Sengupta et al. and Shami et al. and the claimed invention is that Sengupta et al. and Shami et al. do not teach a centralized network server. Solheim et al. teaches in FIG. 2A, FIG. 3 and paragraph [0072] centralized network and element management system (NEMS) and centralized database. One of ordinary skill in the art would have been motivated to combine the teaching of Solheim et al. with the modified WDM network of Sengupta et al. and Shami et al. because a centralized database provides network management personnel a whole picture of the network and facilitates network management. Thus it would have been obvious to

one of ordinary skill in the art at the time the invention was made to include a centralized database in a centralized network management system, as taught by Solheim et al., in the modified WDM network of Sengupta et al. and Shami et al. because a centralized database provides network management personnel a whole picture of the network and facilitates network management.

11. Claims 16-19, 21-22, 24-26, 28, 30-34 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sengupta et al. (S. Sengupta et al., "Analysis of Enhanced OSPF for Routing Lights in Optical Mesh Networks", IEEE, 2002) in view of Shami et al. (Shami et al., "Performance Evaluation of Two GMPLS-Based Distributed Control and Management Protocols for Dynamic Lightpath Provisioning in Future IP Networks", ICC 2002, 28 April-2 May 2002).

Regarding claims 16, 25 and 31, Sengupta et al. teaches in FIG. 1 a WDM optical network including a plurality of nodes. Sengupta et al. defines in p. 2865, right col., Section II.A and FIG. 2 optical channel and optical link. Sengupta et al. teaches to use enhanced OSPF for setting up lightpaths. OSPF uses LSAs to distribute topology information. The difference between Sengupta et al. and the claimed invention is that Sengupta et al. does not teach conversion free connectivity. Shami et al. explains in FIG. 1 a network model where a lightpath comprises an optical signal carried by a wavelength channel traversing a series of nodes and links. Shami et al. teaches in p. 2290, left col., third paragraph that none of the OXC has wavelength conversion because wavelength conversion is expensive. One of ordinary skill in the art would have been motivated to combine the teaching of Shami et al. with the WDM network of Sengupta et al. to use the same wavelength on all the links along the entire route from source-to-destination because wavelength conversion is expensive. Thus it would have been obvious to

one of ordinary skill in the art at the time the invention was made to use the same wavelength on all the links along the entire route from source-to-destination, as taught by Shami et al., in the WDM network of Sengupta et al. because wavelength conversion is expensive.

Regarding claims 17 and 32, Sengupta et al. teaches to use enhanced OSPF for setting up lightpaths.

Regarding claims 18 and 33, Shami et al. teaches in p. 2290, left col., second paragraph optical circuits.

Regarding claims 19, 26 and 34, Shami et al. teaches dynamic lightpath provisioning (see abstract).

Regarding claim 21, Sengupta et al. teaches in p. 2866, right col., last paragraph link management protocol for discovering neighbors.

Regarding claim 22, in OSPF, each node sends update messages to all nodes in the network for maintaining network topology information.

Regarding claims 24 and 36, Shami et al. teaches in p. 2290, right col., second paragraph that a wavelength is either reserved or free (i.e., allocated or unallocated, respectively).

Regarding claim 28, Shami et al. teaches in p. 2291, right col., first and second paragraphs to maintain the database.

Regarding claim 30, Sengupta et al. teaches in p. 2866, right col., last paragraph link management protocol for discovering neighbors and populating link state advertisement (LSA).

12. Claims 20, 27 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sengupta et al. and Shami et al. as applied to claims 16-19, 21-22, 24-26, 28, 30-34 and 36

above, and further in view of Golmie et al. (N. Golmie et al., "A Differentiated Optical Services Model for WDM Networks", IEEE Communications Magazine, February 2000).

Sengupta et al. and Shami et al. have been discussed above in regard to claims 16-19, 21-22, 24-26, 28, 30-34 and 36. The difference between Sengupta et al. and Shami et al. and the claimed invention is that Sengupta et al. and Shami et al. do not teach a plurality of service levels. Golmie et al. teaches in FIG. 3 and Table 1 to divide optical links into channels according to a plurality of service levels. One of ordinary skill in the art would have been motivated to combine the teaching of Golmie et al. with the modified WDM network of Sengupta et al. and Shami et al. because different service levels fulfill different customer needs. For example, certain customers are willing to pay premier charge for high quality service. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to divide the network into a plurality of service levels, as taught by Golmie et al., in the modified WDM network of Sengupta et al. and Shami et al. because different service levels fulfill different customer needs.

13. Claims 23 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sengupta et al. and Shami et al. as applied to claims 16-19, 21-22, 24-26, 28, 30-34 and 36 above, and further in view of Solheim et al. (U.S. Patent Application Pub. 2003/0016414 A1).

Sengupta et al. and Shami et al. have been discussed above in regard to claims 16-19, 21-22, 24-26, 28, 30-34 and 36. The difference between Sengupta et al. and Shami et al. and the claimed invention is that Sengupta et al. and Shami et al. do not teach a centralized network server. Solheim et al. teaches in FIG. 2A, FIG. 3 and paragraph [0072] centralized network and element management system (NEMS) and centralized database. One of ordinary skill in the art

would have been motivated to combine the teaching of Solheim et al. with the modified WDM network of Sengupta et al. and Shami et al. because a centralized database provides network management personnel a whole picture of the network and facilitates network management. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a centralized database in a centralized network management system, as taught by Solheim et al., in the modified WDM network of Sengupta et al. and Shami et al. because a centralized database provides network management personnel a whole picture of the network and facilitates network management.

14. Claims 37-40 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sengupta et al. and Shami et al. as applied to claims 16-19, 21-22, 24-26, 28, 30-34 and 36 above, and further in view of Freeman ("Telecommunication System Engineering" by R. Freeman, John Wiley & Sons, 1980, pp 99-103).

Sengupta et al. and Shami et al. have been discussed above in regard to claims 16-19, 21-22, 24-26, 28, 30-34 and 36. The difference between Sengupta et al. and Shami et al. and the claimed invention is that Sengupta et al. and Shami et al. do not teach a machine-readable medium. Freeman teaches in Section 12 stored-program control (SPC). Freeman teaches in p. 100 to store method steps as program in memory for providing instructions to a controller or computer. One of ordinary skill in the art would have been motivated to combine the teaching of Freeman with the modified WDM network of Sengupta et al. and Shami et al. because SPC is flexible and expandable such that it is easy to upgrade the system by rewriting the program. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use SPC and store program in machine-readable medium, as taught by Freeman, in the

modified WDM network of Sengupta et al. and Shami et al. because SPC is flexible and expandable such that it is easy to upgrade the system by rewriting the program.

15. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sengupta et al., Shami et al. and Freeman as applied to claims 37-40 and 42 above, and further in view of Golmie et al. (N. Golmie et al., "A Differentiated Optical Services Model for WDM Networks", IEEE Communications Magazine, February 2000).

Sengupta et al., Shami et al. and Freeman have been discussed above in regard to claims 37-40 and 42. The difference between Sengupta et al., Shami et al. and Freeman and the claimed invention is that Sengupta et al., Shami et al. and Freeman do not teach a plurality of service levels. Golmie et al. teaches in FIG. 3 and Table 1 to divide optical links into channels according to a plurality of service levels. One of ordinary skill in the art would have been motivated to combine the teaching of Golmie et al. with the modified machine-readable medium of Sengupta et al., Shami et al. and Freeman because different service levels fulfill different customer needs. For example, certain customers are willing to pay premier charge for high quality service. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to divide the network into a plurality of service levels, as taught by Golmie et al., in the modified machine-readable medium of Sengupta et al., Shami et al. and Freeman because different service levels fulfill different customer needs.

Response to Arguments

16. Applicant's arguments filed 9 June 2005 have been fully considered but they are not persuasive.

Regarding claim 10, the Applicant argues on page 14 that the combination of Shami and Sengupta does not teach each "access node" having a database representing conversion free connectivity that is specific to that access node. The Examiner disagrees. Shami et al. teaches conversion free connectivity and Sengupta et al. teaches to use OSPF for routing. It is understood that OSPF uses shortest path algorithm to find possible lightpath having the access node as the source node and other access nodes as destination. Therefore, Shami and Sengupta, considered as a whole, teach claim 10.

Regarding claim 16, the Applicant argues on pages 15-16 that the combination of Sengupta and Shami does not teach or suggest the claim limitation of each access node "maintaining" its own "topology based on conversion free connectivity to others of said plurality of network nodes". The Examiner disagrees. It is understood that in OSPF, each node maintains its own database.

Regarding claim 25, the Applicant argues on page 16 that the combination of Sengupta and Shami does not teach or suggest the claim limitation of each access node having "a database to store a representation of available paths from the access node to others of said access nodes using the wavelengths in said link state database, wherein a path is a series of two or more nodes connected by links on which a common set of one or more wavelength is available for establishing one or more lightpaths." The Examiner disagrees. Shami et al. teaches conversion free connectivity and Sengupta et al. teaches to use OSPF for routing. It is understood that OSPF uses shortest path algorithm to find possible lightpath having the access node as the source node and other access nodes as destination. Therefore, Sengupta et al. and Shami et al., considered as

a whole, teach a database to store a representation of available paths from the access node to other nodes using wavelengths common to all links in the path.

Regarding claim 31, the Applicant argues on page 17 that the combination of Sengupta and Shami does not teach or suggest the claim limitation of each access node having "selecting a path and a wavelength on said path using a database that is stored in said access node and that stores a representation of available paths from the access node to others of said access nodes in said optical network, wherein each path is a series of two or more nodes connected by links on which a common set of one or more wavelengths is available for establishing one or more lightpaths." The Examiner disagrees. Shami et al. teaches conversion free connectivity and Sengupta et al. teaches to use OSPF for routing. It is understood that OSPF uses shortest path algorithm to find possible lightpath having the access node as the source node and other access nodes as destination. Therefore, Sengupta et al. and Shami et al., considered as a whole, teach a database to store a representation of available paths from the access node to other nodes using wavelengths common to all links in the path.

Regarding claim 37, the Applicant argues on page 18 that the combination of Sengupta and Shami does not teach or suggest the claim limitation of "responsive to receiving, at an access node of an wave division multiplexing optical network, demand criteria representing a request for a communication path, selecting a path and a wavelength on said path using a database that is stored in said access node and that stores a representation of available paths from the access node to others of said access nodes in said optical network, wherein each path is a series of two or more nodes connected by links on which a common set of one or more wavelengths is available for establishing one or more lightpaths." The Examiner disagrees. Shami et al. teaches

conversion free connectivity and Sengupta et al. teaches to use OSPF for routing. Sengupta et al. teaches in page 2866, right col., third paragraph that routing of an optical layer connection requires that the entire path for connection be computed at the source OXC and signaled to other OXCs in the path based on lightpath request. That is, based on lightpath request, source node calculates available paths from source node to other nodes (destinations). Since no wavelength conversion is allowed, as taught by Shami, available wavelength common to links along the path must be used. Therefore, Sengupta and Shami, considered as a whole, teach claim 37.

17. Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 571 272-3031. The examiner can normally be reached on Monday-Friday (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

skl
19 August 2005

M. R. Sedighian

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PRIMARY EXAMINER